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Procedure and Equipment for the Continuous Production  
of Filled Containers, preferably made of a Thermoplast

The invention involves a procedure and equipment for the continuous production of containers, preferably made of a thermoplast, where a hose is made in a continuous working process which is filled directly during the working process and is shaped into so-called pillow packages by continuous welding off. According to this process it is possible to fill it with liquid, pasty or powder-like substances.

Procedures are known according to which such individual packages are produced by welding off a hose one-sided. The hose is subsequently filled and shaped by welding off into pillow-shaped packages of the desired length. In addition, it is known to create with lateral welding seams a hose-shaped filling space of foil material which is subsequently filled and shaped into the desired package type by longitudinal welding and which is cut off at the same time. It is also known to produce such containers by running a rope off a storage roll starting from containers filled with liquids or pastes. This results in hoses which are seamless or connected by a seam, whereby each container is filled, sealed and cut off from the hose individually, and these welding points on the container filling opening are kept free from the filling material.

Furthermore, machines to package liquids in such a container are known, in which the pre-fabricated hose is connected with a joint filling hose through a fabricated hose piece.

These known procedures all involve separate working processes whose expensive manufacturing method is improved by the solution according to the invention.

In accordance with the invention a lateral spray head is installed

into a worm clamp of known design which houses the nozzle with a respective profile to produce the hose, etc. and which is also provided with a device to blow in an appropriately measured amount of air and with a device to fill the hose. It is possible to print on the unfilled hose, for instance continuously with the roller printing process.

The filled hose created such is caught by respective drive and transport rolls and preferably, in order to prevent blocking during the stop in the welding process, is moved to the welding equipment through a storage knee.

Behind the welding equipment the pillow-shaped hose, which has been welded off and whose individual parts are still connected with a hose connection, are moved into an appropriate transport and stacking device.

This may be made such that upon completion of the welding process a respectively jointed conveyor belt performs a transport movement which corresponds with the welded measured length, and upon reaching a total length, which has to be set, a separation process, for instance cut off, is triggered, combined with a tilting movement of the conveyor belt in order to deposit the finished hose parts into a respective transport and stacking device.

Separation may also occur by squeeze off in high frequency welding.

In Fig. 1 a design example of the invention is shown. Shown are:

- 1 = schematic view of a worm clamp
- 2 = lateral spray head
- 3 = container for goods to be filled
- 4 = supply line with blocking gate
- 5 = block valve
- 6 = air supply
- 7 = reducing valve
- 8 = exiting hose
- 9 = air inlet into the hose
- 10 = filling material entry into the hose
- 11 = indication of filling material in the hose
- 12 = adjustable transport and regulating rolls for the hose with respective profile
- 13 = mechanically or hydraulically driven HF-welding clamps to squeeze off or weld off, respectively, the individual packages
- 20 = water container for cooling

Fig. 2 shows, schematically and highly simplified, a design example of a transport device. Shown are:

- 14 = welded off packaging containers which are still connected by a thin skin
- 15 = conveyor belt with respective profile

- 16 = toggle switch for control impulse to activate the cut-off knife
- 17 = cut-off knife
- 18 = arrow which indicates the tilt direction of the transport device to throw the cut off hose ends into the stacking device
- 19 = separation clamps

Patent Claims:

1. Procedure for the continuous production of filled containers, preferably of a thermoplast, characterized in that a hose (8), made of a thermoplast, is continuously produced and filled during the production process while, in order to obtain the desired filling level, the principle of communicating pipes applies.
2. Procedure according to claim 1, characterized in that the continuously produced hose is kept in the desired size by the air supply and whose dead weight is caught.
3. Procedure according to claims 1 and 2, characterized in that pillow packages are continuously welded off, while the transition of continuous and step-by-step movement is achieved with a knee-shaped compensating joint on the filled hose.
4. Procedure according to claims 1 through 3, characterized in that the welded off pillow packages, which are still continuous and connected with each other, are pulled off continuously while the cutting off of the desired lengths and throwing or depositing on a stacking or packaging device is regulated periodically.
5. Equipment to perform the procedure according to claims 1 through 4, characterized in that a known worm clamp (1) is provided with a lateral spray head (2) which houses a profiled nozzle which is connected to a line (4) to supply the filling material, and an air inlet (9).
6. Equipment according to claim 5, characterized in that the supply line (4) is provided with a blocking valve (5) and the air supply (6) is provided with a reducing valve (7).
7. Equipment according to claim 5, characterized in that the dead weight of the filled hose (8) is held by profiled support rolls (12).
8. Equipment according to claim 7, characterized in that a profiled conveyor belt (15) moves the hose (8), which is divided into pillows by HF-welding clamps (13), and which is separated into desired lengths by a cut-off knife (17) or by separation clamps (19), respectively, onto a stacking device by operating a switch (17) which is activated by touch.

Attached are 2 drawings.